

58. The method of claim 49 further comprising depositing a passivation layer over said interconnecting metalization structure.

59. The method of claim 58 wherein said passivation layer comprises Plasma Enhanced CVD (PECVD) oxide.

60. The method of claim 58 wherein said passivation layer comprises Plasma Enhanced CVD (PECVD) nitride.

61. The method of claim 49 wherein said insulating, separating layer is a polymer dielectric layer or any other appropriate insulating material.

62. The method of claim 49 wherein said insulating, separating layer is selected from the group comprising polyimide and benzocyclobutene (BCB).

63. A method for forming a top metalization system for high performance integrated circuits, comprising: forming an integrated circuit comprising a plurality of devices formed in and on a semiconductor substrate, with an overlaying interconnecting metalization structure connected to said devices and comprising a plurality of fine-wire metal lines;

depositing a passivation layer over said interconnecting fine-wire metalization structure;

depositing an insulating, separating layer over said passivation layer that is substantially thicker than said passivation layer; forming openings through said insulating, separating layer to expose upper metal portions of said overlaying interconnecting metalization structure;

depositing metal contacts in said openings thereby raising a plurality of contact points in said overlaying interconnecting metalization structure to the top surface of said insulating, separating layer thereby creating elevated interconnecting metalization contact points;

forming said top metalization system connected to said overlaying interconnecting metalization structure, wherein said top metalization system comprises a plurality of top wide-metal lines, in one or more layers, having a width substantially greater than said fine-wire metal lines, wherein said top metalization system directly interconnects said elevated interconnecting metalization contact points thereby functionally extending or connecting said fine-wire metal interconnects with said wide-wire metal interconnects thereby furthermore establishing electrical interconnects between multiple points within said fine-wire interconnects.

64. The method of claim 63 wherein said top metalization system comprises signal lines that are substantially wider than lines in said interconnecting metalization structure.

65. The method of claim 63 wherein said top metalization system comprises power planes that are substantially wider than lines in said interconnecting metalization structure.

66. The method of claim 63 wherein said top metalization system comprises ground planes that are substantially wider than lines in said interconnecting metalization structure.

67. The method of claim 63 wherein said passivation layer comprises Plasma Enhanced CVD (PECVD) oxide.

68. The method of claim 63 wherein said passivation layer comprises Plasma Enhanced CVD (PECVD) nitride.

69. The method of claim 63 wherein said insulating, separating layer is a polymer dielectric layer or any other appropriate insulating material.

70. The method of claim 63 wherein said insulating, separating layer comprises polyimide.